

**REMARKS**

By this Amendment, Claims 4, 5, 17, 20, 21, 24-30 and 32 are amended and Claims 33-36 are added. As such, Claims 4, 5, 17, 20, 21, 24-30 and 32-36 are pending herein. No new matter is added by this Amendment.

Support for the Amendment to Claims 4, 5 and 17 may be found at least in Paragraphs [0036] and [0044].

Support for the Amendment to Claim 20 may be found at least in Paragraphs [0077] and [0080].

Support for the Amendment to Claim 21 may be found at least in Paragraph [0081].

Support for the Amendment to Claims 24 and 25 may be found at least in Paragraphs [0052], [0054] and [0064].

Support for the Amendment to Claim 26 may be found at least in Paragraphs [0064] and [0066].

Support for the Amendment to Claim 27 may be found at least in Paragraph [0058].

Support for the Amendment to Claims 28 and 29 may be found at least in Paragraphs [0052], [0060], [0061] and [0062].

Support for the Amendment to Claim 30 may be found at least in Paragraph [0060].

Support for the Amendment to Claim 32 and Claim 33 may be found at least in Paragraphs [0056] and [0066].

Support for Claims 34 and 35 may be found at least in Paragraphs [0036] and [0044].

Support for the Amendments to Claims 36 may be found at least in Paragraphs [0032], [0036], [0038], [0041], [0042] and [0044].

**I. Claim Rejections Under 35 USC 112, first paragraph.**

Claims 4 and 5 were rejected under 35 U.S.C. 112 on the ground that they allegedly constitute new matter since limitations called for in the above mentioned claims were never previously disclosed. The rejection is respectfully traversed.

Pursuant to the Primary Examiner's suggestion, Claims 34 and 35 were added to this Application to claim the "bottom-out condition" apart from the "overinflation condition" in Claims 4 and 5. The basis for Claims 4, 5, 34 and 35 can be found in the specification in at least Paragraphs [0036] and [0044]. Paragraph [0036] discloses an overinflation system controlled by a magnetically activated reed switch. Paragraph [0044] discloses an alarm that is used to indicate that an overinflation condition has occurred and has not been corrected. Accordingly, withdrawal of the rejection of Claims 4 and 5 under 35 U.S.C. 112 is requested.

Claim 17 was rejected under 35 U.S.C. 112 on the ground that it allegedly constitutes new matter since limitations called for in the above mentioned claim was never previously disclosed. The rejection is respectfully traversed.

Claim 36 was added to this application to claim the "bottom-out condition" apart from the "overinflation condition" in Claim 17. Support for Claims 17 and 36 may be found at least in Paragraphs [0036] and [0044]. Accordingly, withdrawal of the rejection of Claim 17 under 35 U.S.C. 112 is requested.

Claim 20 was rejected under 35 U.S.C. 112 on the ground that it allegedly constitutes new matter since limitations called for in the above mentioned claim was never previously disclosed. The rejection is respectfully traversed.

The basis for the amendment in Claim 20 can be found in the specification in at least Paragraph [0080]. Paragraph [0080] discloses a top housing layer that may be molded to form the chases, vias, and compartments. Paragraph [0077] discloses compartments that provide space for the batteries, air pump and air valve. Accordingly, withdrawal of the rejection of Claim 20 under 35 U.S.C. 112 is requested.

Claim 21 was rejected under 35 U.S.C. 112 on the ground that it allegedly constitutes new matter since limitations called for in the above mentioned claim was never previously disclosed. The rejection is respectfully traversed.

The basis for Claim 21 can be found in the specification in at least Paragraph [0081]. Paragraph [0081] discloses a middle housing layer that may be of a thin lightweight material. Accordingly, withdrawal of the rejection of Claim 21 under 35 U.S.C. 112 is requested.

Claim 27 was rejected under 35 U.S.C. 112 on the ground that it allegedly constitutes new matter since limitations called for in the above mentioned claim was never previously disclosed. The rejection is respectfully traversed.

The basis for the amendment in Claim 27 can be found in the specification in at least Paragraph [0058]. Paragraph 58 discloses that in some embodiments, the air connects are provided on the sides of the air chamber sensor. Accordingly, withdrawal of the rejection of Claim 27 under 35 U.S.C. 112 is requested.

## **II. Claim Rejections Under 35 USC 112, second paragraph.**

Claims 24-30 and 32 were rejected under 35 U.S.C. 112 on the ground that they are indefinite. Claims 24-30 and 32 have been amended herein so that they are no longer indefinite. Amended Claims 24 and 28 were specifically amended to address the relationship between the

air cushion and the air chamber. Accordingly, withdrawal of the rejection of Claims 24-30 and 32 under 35 U.S.C. 112 is requested.

**III. Claim Rejections Under 35 USC §103 (a).**

**A. Graebe in view of Jay.**

Claims 24-27 were rejected under 35 USC §103(a) as allegedly being unpatentable over United States Patent No. 5,473,313 to Graebe ("Graebe '313") in view of United States Patent No. 4,726,624 to Jay. This rejection is respectfully traversed.

Graebe '313 discloses an air cushion control system comprising an air chamber sensor (34) including an air chamber (see Fig. 1), a bottom out sensor (80,88), and an overinflation sensor (82,90), an air pump (40) to inflate the air chamber, an air valve (52,62) to release air from the air chamber, means (46,50,54,58) to connect the air cushion control system to an air cushion (see col. 3 line 35+) and a microprocessor (74) to control the inflation and the release of the air from the air chamber. A housing (30,12). An alarm is sounded when in bottom-out condition (col. 4 line 15). Graebe '313 discloses the invention substantially as claimed. However, Graebe '313 is silent about the distance from an edge of the air chamber sensor to an end of the channel wall does not exceed one half of the distance between the channel walls.

The Patent Office alleges that Jay "teaches measuring a time period when a cushion is the distance from an edge of the air chamber sensor to an end of the channel wall does not exceed one half of the distance between the channel walls." Applicant respectfully disagrees with this interpretation of Jay.

Applicant notes Column 7, Lines 36-38 and 50-55 of Jay: "The pad is segmented along the front by heat seals 34 and along the sides by heat seals 36," and "the front area pad 20

includes a plurality of segmenting heat seals 34, which run from near the front of the pad . . . these segments define the area over which the user's legs pass." Applicant notes that the front area of the pad in Jay includes heat seals that do not transverse to the rear edge of the pad. Jay makes no mention, other than that described above, of the location of the heat seals from the edge of the pad. Jay does not specify the distance of the heat seals from the edge of the pad. In the present invention, the distance or spacing at the ends of the channel walls to the edge of the air chamber sensor must be no more than about one half the distance between the ends of the channel walls. Explained another way, the combined distance between the edge of the air chamber sensor and the end of the channel walls for each side of the channel walls will be about equal to the distance that the channel walls are apart from each other.

Applicant also notes Column 8, Lines 1-8 of Jay: "It is preferred to provide the pad with a center heat seal which runs from the front edge to the rear edge and which, in effect, divides the pad longitudinally into a left half and a right half. The center heat seal avoids the possibility of the fluid filling material migrating out of one side and assures that both sides of the pad contain equal amounts of fluid filling material."

Unlike Jay, the present invention does not include a channel wall that divides the pad into a left half and right half. In the present invention, the spacing of the channel walls provides uniform support throughout the air sensor chamber.

The present invention does not "control the volume of filling material." In the present invention, the distance between the channel walls controls the maximum height the air chamber sensor may be inflated. The spacing of the channel walls provides uniform support and expansion of the air sensor chamber and helps govern and regulate air flow to the air cushion.

In Column 9, Lines 50-57, Jay claims: “1. A pressure equalizing seat cushion ... comprising: a ...pad comprising a flexible envelope containing a flowable fluid filling material....”

Jay utilizes an envelope of a predetermined amount of fluid filling material to equalize the seat cushion. The present invention provides an air cushion control system that automatically adjusts immersion depth of an individual into the air cushion by providing or removing air from the air cushion, not by utilizing a set amount of fluid filling material. Thus, Claims 24-27 of the present invention are not rendered obvious by the combination of Graebe ‘313 and Jay.

With respect to Claim 24, Jay fails to teach or suggest the distance from an edge of a chamber sensor to an end of a channel wall does not exceed one half of the distance between the channel walls.

With respect to Claim 25, Jay fails to teach or suggest the end of the channel walls do not extend totally to the edge of the air chamber sensor.

With respect to Claim 26, Jay fails to teach or suggest a pocket layer capable of holding a sensor board.

With respect to Claim 27, Jay fails to teach or suggest an air chamber sensor with air connects on its side.

As such, Applicant respectfully suggests that Graebe ‘313 in view of Jay fails to teach or suggest the present invention. Reconsideration and withdrawal of the rejection are respectfully requested.

B. Graebe in view of Johnson.

Claims 28-30 and 32 were rejected under 35 USC §103 (a) as allegedly being unpatentable over Graebe '313 in view of United States Patent No. 5,450,638 to Johnson. This rejection is respectfully traversed.

Graebe '313 discloses an air cushion control system comprising an air chamber sensor (34) including an air chamber (see Fig. 1), a bottom out sensor (80,88), and an overinflation sensor (82,90), an air pump (40) to inflate the air chamber, an air valve (52,62) to release air from the air chamber, means (46,50,54,58) to connect the air cushion control system to an air cushion (see col. 3 line 35+) and a microprocessor (74) to control the inflation and the release of the air from the air chamber. A housing (30,12). An alarm is sounded when in bottom-out condition (col. 4 line 15). Graebe '313 discloses the invention substantially as claimed. However, Graebe '313 is silent about including support strips in his air channels.

The Patent Office alleges that Johnson "teaches support strips in air channels (see Fig. 3)."

Applicant notes Column 7, Lines 25-30 and 36-37 of Johnson: "Fig. 3 shows rigid or stiff end members 11a and 11b lining end portions 3a and 3b respectively. Rigid end members stiffen end portions 3. In the preferred embodiment, the stiffening of end portions 3 is achieved by attaching separate, rigid end members 11" and "Fig. 3, Fig. 4, and Fig. 5 show bottom portion 2b having two stiff, base members 7."

Claim 1 of Johnson, Column 17, Lines 41-46, claims "A substantially supportive cushion comprising: a) a substantially airtight hollow body comprising: 1) a party of end portions (3), made of substantially air impervious material, said end portions (3) being substantially opposed when in an erect configuration;"

As discussed in the language noted by Applicant above, the rigid end members in Johnson are inserted in end portions of a substantially airtight hollow body to make them stiff. The support strips in the present application do not serve the same purpose. Paragraph [0060] describes inserting support strips in the air channels to reduce the amount of air bled into the air cushion from the air chamber sensor. The support strips inserted in the air channels of the present invention are of a proper height and a proper width to achieve proper actuation of the bottom out sensors and adjustment in either a compressed or non-compressed state. Unlike the use of rigid end members in the Johnson patent, the support strips in the present invention do not make the air channels more "stiff," or provide support as the general meaning of the term might suggest. Thus, Claims 28-30 and 32 of the present invention are not rendered obvious by the combination of Graebe '313 and Johnson.

With respect to Claims 28, Johnson fails to teach or suggest an air chamber sensor including an air chamber with multiple air channels containing support strips.

With respect to Claim 29, Johnson fails to teach or suggest an air chamber sensor including an air chamber with multiple air channels containing support strips made of foam, plastic, a combination thereof or any other hard material.

With respect to Claim 30, Johnson fails to teach or suggest support strips that reduce the bleeding of air from the air chamber sensor back into the air cushion when the air cushion is unoccupied.

With respect to Claim 32, Johnson fails to teach or suggest an air chamber sensor including an air chamber with multiple air channels that contain support strips capable of activating bottom out sensors.



Appl. No. 10/691,821  
Amendment dated November 21, 2005  
In Response to Office Action Dated May 19, 2005

As such, Applicant respectfully suggests that Graebe '313 in view of Johnson fails to teach or suggest the present invention. Reconsideration and withdrawal of the rejection are respectfully requested.

**IV. Conclusion.**

Applicant respectfully submits that the present Application is in condition for allowance. The Patent Office is invited to contact the undersigned with any questions with respect to the present Application.

Respectfully submitted,

GALLOP, JOHNSON & NEUMAN, L.C.

By: 

Attorney for Applicant  
John W. Kepler, III, Reg. No. 30,397  
Alisha Logan Huls, Reg. No. 54,609  
101 S. Hanley, Suite 1600  
St. Louis, Missouri 63105  
Tel.: (314) 615-6000  
Fax: (314) 615-6001

Date: NOVEMBER 21, 2005